

(54) REFLECTION TYPE ULTRASONIC IMAGE APPARATUS

(11) 4-340463 (A) (43) 26.11.1992 (19) JP

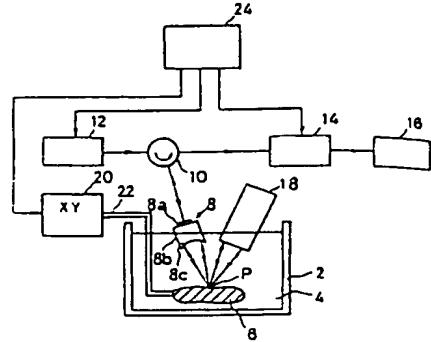
(21) Appl. No. 3-113092 (22) 17.5.1991

(71) OLYMPUS OPTICAL CO LTD (72) MASAHIRO ONO

(51) Int. Cl. G01N29/06, G01B17/00, G01N29/20, G01N29/22

PURPOSE: To obtain the image of the part near to the surface of an object to be inspected without superposing the contrast of the surface of the uneven shape of the object to be inspected.

CONSTITUTION: Ultrasonic waves are allowed to be incident to the measuring point P of an object 6 to be inspected from an ultrasonic transmitter-receiver 8 and the reflected waves to the incident waves are received by a phase conjugate mirror 18. The phase conjugate mirror 18 allows the phase conjugate waves to the received reflected waves to be incident to the measuring point P of the object 6 to be inspected. At this time, the strain of the wave front of the reflected waves caused by the surface uneven shape of the object 6 to be inspected is set off by the time reversal properties of the phase conjugate waves. The reflected waves from the measuring point P to the phase conjugate waves are received by the transmitter-receiver 8 and converted to the electric signal corresponding to the intensity thereof. This electric signal output is different according to the acoustic impedance of the measuring point P. Therefore, by scanning the measuring point P by an XY scanner 20 and plotting the reflected wave output at each scanning point on a display 16, the image of the part near to the surface of the object 6 to be inspected is formed.



12: oscillator, 14: signal processing circuit, 24: controller

(54) NON-DESTRUCTIVE INSPECTION OF MULTILAYER RESIN MOLDED PRODUCT

(11) 4-340464 (A) (43) 26.11.1992 (19) JP

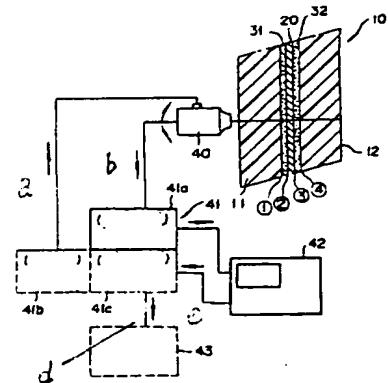
(21) Appl. No. 3-112696 (22) 17.5.1991

(71) NISSAN MOTOR CO LTD (72) SHINSUKE ETO (2)

(51) Int. Cl. G01N29/10, G01N29/22

PURPOSE: To detect the presence of an adhesive layer even if thin by irradiating a resin molded product with ultrasonic wave to calculate the waveforms of the reflected waves of the inside, intermediate and outside layers thereof and discriminating the adhesive layer and the thickness thereof from the small displacement waveform of the outside layer and the peak waveform of the intermediate layer.

CONSTITUTION: A probe 40 radiates a tank 10 with ultrasonic waves to receive the reflected waves from boundary surfaces. The reflected wave signal from the probe is processed by an ultrasonic control part 41a to project waveforms on an oscilloscope 42. The waveforms are obtained by processing the signal obtained from the probe 40 on the basis of the relation between the propagation speed of ultrasonic waves in a substance such as a resin and the reflectivity at the boundary surface of mutual different substances. The waveforms of the reflected waves of an intermediate layer 20 and adhesive layers 31, 32 among the irradiated ultrasonic waves are stored to search the peak point of the boundary surface on the inner surface side of the intermediate layer 20 and the next peak point on the internal side thereof to calculate the distance between the peak points. When the distance is a reference value or more, the presence of inside adhesive layers 31, 32 is outputted and, when the distance is the reference value or less, the distance is outputted from the propagation speed between the peak points.



43: output apparatus, a: probe angle control, b: reflected wave signal, c: reflected waveform, d: output, e: waveform processing control part, 41b: probe control part, 41c: waveform processing control part

(54) SERUM SEPARATING SEALANT

(11) 4-340465 (A) (43) 26.11.1992 (19) JP

(21) Appl. No. 3-141266 (22) 16.5.1991

(71) NIPPON PAINT CO LTD (72) KEITA MIZUTANI (3)

(51) Int. Cl. G01N33/48//C08L33/06

PURPOSE: To provide a sealant having satisfactory flow properties even when the addition amount of silica is relatively little by adding a compound such as liquid olefin relatively low in an affinity for silica to a liquid acrylic resin and further adding a viscosity and specific gravity control agent thereto.

CONSTITUTION: A sealant having satisfactory flow properties is obtained by adding a viscosity and specific gravity control agent to a liquid acrylic resin obtained by polymerizing alkyl (meta)acrylate having a 20 or less C alkyl group, a polyfunctional monomer having two or more radical polymerizable unsaturated bonds in its molecule and/or a monomer having a radical polymerizable unsaturated bond and a hydrolysable silyl group in its molecule with a liquid compound such as liquid olefin.